On Criteria of Optimality in Estimation for Stochastic Processes

C.C. Heyde, *Australian National University, Canberra, Australia*

Optimality is a widely and loosely used term in inference for stochastic procedures. This talk will be concerned with categorizing and contrasting various criteria which give the "best" estimator within a specified class of alternatives.

References

[1] V.P. Godambe and C.C. Heyde, Quasi-likelihood and optimal estimation, Int. Statist. Rev. 55 (1987), in press.
[2] C.C. Heyde, On combining quasi-likelihood estimating functions, Stochastic Process. Appl. 25 (1987), in press.
[3] P. Kulkarni and C.C. Heyde, Optimal robust estimation for discrete time stochastic processes, Stochastic Process. Appl. 26 (1987), to appear.

On Estimating Measures of Performance for Queues and Survival Models

D.P. Gaver and P.A. Jacobs*, *Naval Postgraduate School, Monterey, CA, USA*

Many random times of interest, T, in queueing and reliability models have survivor functions which are asymptotically exponential; that is, $P\{T > t\} \sim c\, e^{-\kappa t}$ as $t \to \infty$. Often the parameter κ is the solution to an equation involving the transforms or moment generating functions of the component distributions in the model. The parameter c is often a function of κ and the component distributions. Suppose that finitely many observations are all that is known about some or all of the component distributions of the model. If the parametric forms of the component distributions are known, then estimates of the parameters of the distributions can be found via maximum likelihood or method of moments etc., and κ and c can be determined parametrically. However, if, perhaps because of small sample sizes, the parametric forms of the distribution functions are incorrectly specified, then parametric estimates of κ and c can be very misleading. The nonparametric estimation of κ and c will be discussed. The methodology will be illustrated in a number of specific models.

Forecasting with Non-Linear Time Series Models

John Pemberton, *University of Salford, UK*

In recent years, the fitting of nonlinear models to time series data has become well developed. These models include threshold autoregressions, bilinear and the more general state-dependent models. They have usefully modelled nonlinear features of the data, perhaps the most well cited being "limit cycle" behaviour, non-Gaussianity and time irreversibility.